

REMARKS

The Office Action mailed on August 25, 2005, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1-14 were pending, *although it appears that only claims 1-11 were examined*. By this paper, Applicants do not cancel any claims, and add claims 15-16. Therefore, claims 1-16 are now pending.

Applicants respectfully submit that the present application is in condition for allowance for the reasons that follow.

Indication of Allowable Subject Matter

Applicants thank Examiner Mullins for the indication that claim 3 contains allowable subject matter. Applicants have placed claim 3 into independent form by incorporating the recitations of claim 1 prior to the above amendment.

Unexamined Claims 12-14

Applicants added claims 11-14 in the Response of July 18, 2005. These claims have not been examined.

Claim Rejections Under 35 U.S.C. §103(a)

In the Office Action, Claims 1-2 and 5-8 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nakano (U.S. Patent No. 6,114,784) in view of Muramatsu (JP 11-346446). Claims 1, 4 and 8-9 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nakano in view of Itoh (U.S. Patent No. 6,225,725). Claim 10 is rejected

under 35 U.S.C. §103(a) as being unpatentable over Nakano in view of Muramatsu and Kurosawa (U.S. Patent No. 6,043,583).

Applicants respectfully submit that the above claims are allowable for at least the following reasons.

Applicants rely on MPEP § 2143, which states that:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

It is respectfully submitted that the asserted combinations are deficient with respect to at least the first and third criteria, and thus a *prima facie* case of obviousness cannot be established in view of any combination.

The Cited References Do Not Suggest All Claim Recitations

Even if the first requirement of MPEP § 2143 could be satisfied with the cited references (which it cannot, as explained below), the third requirement, that “the prior art reference (or references when combined) must teach or suggest all the claim limitations,” can still not be met, at least in regard to any of the above identified combinations.

The Office Action correctly recognizes that Nakano fails to teach a stator having the features of the ring plate as claimed. Particularly, the Office Action recognizes that Nakano does not teach at least one connecting ring plate of an endless annular configuration coaxially installed in the stator core as claimed. Instead, the Office Action asserts that Muramatsu and Itoh both, when individually combined with Nakano, remedy this deficiency. Assuming *arguendo* that this is the case, it is respectfully submitted that the combination of Nakano with Muramatsu and Nakano with Itoh does not result in the invention of claims 1, 10 and 11, as amended, and thus does not result in any claim dependent therefrom.

Claim 1, as amended, recites that the stator includes at least one connecting ring plate coaxially installed in the stator core “in such a manner that the ring plate is put between adjacent two of the flat magnetic steel plates of each stator tooth, the ring plate being of an endless annular member *and having a thickness that is smaller than an axial length of the stator.*” (Claim 1, emphasis added.) Claim 1 further recites that the stator includes “*two bracket members between which the stator core, having therein the connecting ring plate, is sandwiched*” and “*connecting members to fasten the sandwiched stator core within the two bracket members.*” Nakano, Muramatsu and Itoh do not disclose or suggest any of these features, as will now be explained

For example, none of these references disclose or suggest *two bracket members between which the stator core, having therein the connecting ring plate, is sandwiched.* Nakano, as recognized in the Office Action, does not teach a stator having the recited connecting plate, and thus cannot meet this recitation. Muramatsu depicts a stator without bracket members (*see, e.g., Figs. 5 and 7, etc., of Muramatsu*). Itoh also depicts a stator without bracket members (*see, e.g., Fig. 9, etc., of Itoh*). As Kurosawa (used to reject claim 10) does not remedy this deficiency of these references, claim 1 is not obvious in view of the cited references even with respect to the combination applied to reject claim 10.

Still further, none of these references disclose or suggest *connecting members to fasten the sandwiched stator core within the two bracket members.* (An exemplary embodiment of this feature may be seen in Fig. 6A, where connecting members 119 are shown fastening the sandwiched stator within bracket members 113 and 118.) Again, Nakano, as recognized in the Office Action, does not teach a stator having the recited connecting plate, and thus cannot meet this recitation. Muramatsu depicts a stator without connecting members (*see, e.g., Figs. 5 and 7, etc., of Muramatsu*). Itoh also depicts a stator without connecting members (*see, e.g., Fig. 9, etc., of Itoh*). Kurosawa again does not remedy this deficiency of these references, and thus claim 1 is not obvious in view of the cited references for yet another reason.

Furthermore, none of the cited references recite that the stator includes at least one connecting ring plate coaxially installed in the stator core “in such a manner that the ring plate is put between adjacent two of the flat magnetic steel plates of each stator tooth, the ring plate being of an endless annular member *and having a thickness that is smaller than an axial*

length of the stator.” As seen from Figs. 7 and 9 of Muramatsu, the stator 8 comprises a yoke 8Y and a magnetic tooth portion 8P. In view of Fig. 1, in order to make the short of magnetic circuits as small as possible, while avoiding a loss separation of elements of the magnetic tooth portion 8P when assembling the stator 8, the magnetic tooth portion 8P is constructed by mutually separated teeth blocks 80 and non-magnetic plates 81. That is, the motor disclosed in Muramatsu is of a single rotor single stator type, and thus is different from that of the present invention.

Also, Muramatsu teaches that the cylindrical yoke 8Y and the non-magnetic plates 81 are used as connecting means by which the teeth blocks 80 are tightly held. As may be seen, the axial length of the cylindrical yoke 8Y is equal to that of the stator 8. Itoh, at Fig. 9, also teaches connecting means that is equal to that of the stator.

In contrast, the invention of claim 1 recites that the ring plate is of an endless annular member *and having a thickness that is smaller than an axial length of the stator*. This is yet another difference between the invention of claim 1 and Muramatsu.

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Claims 10 and 11 are allowable for at least the same reasons detailed above.

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In sum, even if the first requirement of MPEP § 2143 could be satisfied, the third requirement of MPEP § 2143 cannot be satisfied with the cited references, because the cited references do not teach each and every element of the present invention.

Lack of Suggestion or Motivation to Modify or Combine the References

MPEP § 2143.01 states that “the prior art *must* suggest the desirability of the invention.” (MPEP § 2143.01, subsection 1, emphasis added.) Applicants submit that the present claims are allowable on the grounds that the first requirement of MPEP § 2143 cannot be met with respect to any of the asserted combinations.

All of the Primary Combinations: MPEP § 2144.05(III), entitled Rebuttal Of *Prima Facie* Case Of Obviousness, states that a “*prima facie* case of obviousness may also be rebutted by

showing that the art, in any material respect, teaches away from the claimed invention.” (MPEP § 2144.05(III), second paragraph, emphasis added, citations omitted.)

With respect to the combination of either of Nakano with Muramatsu and Nakano with Itoh, both Muramatsu and Itoh teach away from the present invention. As detailed above, Muramatsu specifically teaches a stator without bracket members (*see, e.g.*, Figs. 5 and 7, *etc.*, of Muramatsu). Itoh also depicts a stator without bracket members (*see, e.g.*, Fig. 9, *etc.*, of Itoh). Instead, the stator of Muramatsu is held together with the yoke 8Y, and the stator of Itoh also appears to be held together utilizing a yoke. Thus, these two references teach away from the present invention for at least this reason. Therefore, to the extent that a *prima facie* case of obviousness has indeed been established, such case is rebutted with respect to the motivation to modify these references.

Nakano + Muramatsu: Moreover, Applicants respectfully submit that a *prima facie* case of obviousness has not yet been established and cannot be established. First, the teachings of Muramatsu are entirely directed towards a single rotor single stator type motor. This is substantially different from the two rotor single stator type electric motor of Nakano. The ordinary artisan, who is by definition an non-innovator, would not have sought out a single rotor/stator type motor for teachings to be incorporated into such a different type motor as Nakano. Such action is the work of an innovator, and thus the combination is not obvious.

Second, as described above, Muramatsu teaches the use of non-magnetic plates 81 to form/make the stator 8 by utilizing yoke 8Y and the mutually separated teeth blocks 80, which are, of course, separate members. That is, because of the required construction of the stator 8 that comprises the yoke 8Y and the mutually separated teeth blocks 80 which are separate from the yoke 8Y, usage of the non-magnetic plates 81 is needed in the arrangement of Muramatsu. Thus, the combination of Muramatsu with the two rotor single stator motor of Nakano would not have been obvious to the ordinary artisan.

Third, the motivation provided to combine Nakano with Muramatsu is not sufficient to so establish a case of obviousness. The Office Action alleges, for motivation to modify Nakano with the plate 81 of Muramatsu, that such a modification “would have eliminated leakage flux.” However, there is no evidence that the device of Nakano suffers from

appreciable “leakage flux.” Further, there is no evidence that the ordinary artisan would have known or even considered the design of Nakano to suffer from “leakage flux.” Indeed, Nakano is the U.S. patent based on Japanese Laid-open Patent Application (Tokkai) 2000-14086 that is described in the first page of the specification as a related art. That is, Nakano shows the known stator (301) of Figs. 11A and 11B. Applicants labored to improve upon this design, and were motivated to add connecting rings to such a design to provide the stator teeth with a satisfied rigidity against the torque for suppression of deformation. (See specification, page 2, second full paragraph.) Thus, there is no evidence that such a modification to Nakano would have obviously been desirable with respect to eliminating “leakage flux.”)

Also, while it is true that Muramatsu teaches that his plates do eliminate magnetic leakage, such is done in a design where the stator teeth 80 are **not** independent from one another (*see, e.g.*, Figs. 1 and 5, etc.). Thus, there is no evidence that the plates of Muramatsu could be successfully implemented to achieve the elimination of leakage flux, or would have been viewed as successfully eliminating leakage flux, in a stator having teeth that are independent from one another.

Nakano + Itoh: The Office Action asserts that “it would have been obvious to modify Nakano and provide connecting ring plates per Itoh to improve manufacture.” First, as noted above with respect to the deficiencies of Itoh under the third requirement of MPEP § 2143, Itoh does not use a connecting ring in its stator. Instead, Itoh teaches the creation of a blank ring 50 from which elements are taken to make a stator. Thus, Itoh does not – cannot – teach the use of a connecting ring to improve manufacture. In fact, by teaching that the blank ring 50 is broken up, Itoh teaches away from the invention of the claims.

Further, the Office Action does not provide any rationale as to why the teachings of Itoh would have been seen as improving manufacturability of Nakano. Other than the general assertion about the advantages of combining Itoh with Nakano quoted above, nothing more is said about this assertion. If the first requirement of MPEP § 2143 could be satisfied by merely asserting advantages in manufacturability, without any rationale, the first requirement

would be completely eviscerated. In fact, it is quite likely that the ordinary artisan would have viewed the teachings of Itoh as complicating the manufacturing process of Nakano, as Itoh teaches braking up the components that make the teeth from the blank ring 50 and then bracing those components together with elements 38 and 31, which would have appeared to the ordinary artisan to have been much more complicated than the teachings of Nakano. Thus, Itoh would have taught away from the invention of the claims.

Nakano + Muramatsu + Kurosawa: The combination of these three references would not have been obvious for at least the reason that there is no motivation to combine Nakano and Muramatsu, as detailed above. Thus, assuming *arguendo* that it would have been obvious to combine Kurosawa with Nakano, a *prima facie* case of obviousness still is not made.

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In sum, the prior art does not provide sufficient motivation to modify Nakano with the teachings of Muramatsu, let alone with the further teachings of Kurosawa, and does not provide sufficient motivation to modify Nakano with the teachings of Itoh, and thus the first requirement of MPEP § 2143 cannot be met with these two references.

New Claims

As seen above, Applicants have added new claims 15 and 16. These claims contain recitations removed from claims 1 and 10, respectively, that are no longer needed to differentiate these claims from the cited references after the above amendments.

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment,

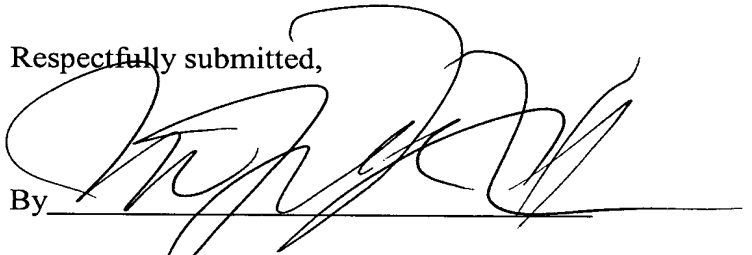
to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Mullins is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

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Respectfully submitted,

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